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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/591,930	06/12/2000	Stephen W. Farnsworth	00P7677US	3694

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BOSTON, MA 02110

EXAMINER

LE, KIMLIEN T

ART UNIT PAPER NUMBER

2653

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/591,930	Applicant(s) FARNSWORTH ET AL.	
	Examiner Kimlien T Le	Art Unit 2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
4a) Of the above claim(s) 15-31 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4, 7-14, 35 and 37 is/are allowed.
- 6) ☒ Claim(s) 32 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 33, 34, 36 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Objections

1. Claims 5-6, 33-34, 36 and 38 are objected to because of the following informalities: "a" (claim 5, line 9; claim 6, line 9) should be omitted. Moreover, "frequency" (claims 33-34 and 36, line 2; claim 38, line 3) should be --period--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 32 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the specification, "wherein at least one of the periodic spatial patterns specified by the geometric pattern filters has a frequency that is related by an integer number to a frequency of markings on the disk (See claim 32)" is not mentioned and therefore is considered new matter.

Allowable Subject Matter

3. Claims 1-14, 33- 38 are allowed.

The following is an examiner's statement of reasons for allowance:

Independent claim 1 requires a lensless optical servo system comprising a plurality of geometric pattern filters to filter light reflected from a rotating disk, each of the geometric pattern filters specifying a corresponding periodic spatial pattern to filter the reflected light, at least two of the geometric pattern filters specifying respective periodic spatial patterns that are out of phase relative to each other; and a plurality of photodetectors to detect the light reflected from the disk and filtered by the geometric pattern filters, each photodetector being covered by a respective geometric pattern filter in the plurality of geometric pattern filters. These features in combination with the other features of the claim are not anticipated by nor made obvious over, the prior art of record.

Independent claim 5 requires a lensless optical servo system comprising:
a plurality of geometric pattern filters to filter light reflected from a rotating disk; and
a plurality of photodetectors to detect the light reflected from the disk and filtered by the geometric pattern filters, each photodetector being covered by a respective geometric pattern filter in the plurality of geometric pattern filters, wherein the plurality of photodetectors includes a first photodetector and a second photodetector, the first photodetector is covered by a first sinusoidal pattern filter and the second photodetector is covered by a second sinusoidal pattern filter, and the first sinusoidal pattern filter and the second sinusoidal pattern filter are offset from each other by approximately ninety degrees. These features in combination with the other features of the claim are not anticipated by nor made obvious over, the prior art of record.

Independent claim 6 requires a lensless optical servo system comprising: a plurality of geometric pattern filters to filter light reflected from a rotating disk; and plurality of photodetectors to detect the light reflected from the disk and filtered by the geometric pattern

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filters, each photodetector being covered by a respective geometric pattern filter in the plurality of geometric pattern filters, wherein the plurality of photodetectors includes a first photodetector and a second photodetector, the first photodetector is covered by a first sinusoidal pattern filter and the second photodetector is covered by a second sinusoidal pattern filter, and the first sinusoidal pattern filter and the second sinusoidal pattern filter are offset from each other by approximately one hundred twenty degrees. These features in combination with the other features of the claim are not anticipated by nor made obvious over, the prior art of record.

Independent claim 35 requires a disk drive system comprising: a plurality of geometric pattern filters to filter light reflected from a rotating disk, each of the geometric pattern filters specifying a corresponding spatial pattern to filter the reflected light based on the reflective pattern on the disk, at least two of the geometric pattern filters specifying respective spatial patterns that are out of phase relative to each other; and a plurality of photodetectors to detect the light reflected from the disk and filtered by the geometric pattern filters, each photodetector being covered by a respective geometric pattern filter in the plurality of geometric pattern filters. These features in combination with the other features of the claim are not anticipated by nor made obvious over, the prior art of record.

Independent claim 37 requires a lensless optical servo system comprising: a plurality of geometric pattern filters to filter light reflected from a rotating disk, each of the geometric pattern filters specifying a corresponding spatial pattern to filter the reflected light based on the reflective pattern on the disk, at least two of the geometric pattern filters specifying respective spatial patterns that are out of phase relative to each other; and a plurality of photodetectors to detect the light reflected from the disk and filtered by the geometric pattern filters, each

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photodetector being covered by a respective geometric pattern filter in the plurality of geometric pattern filters. These features in combination with the other features of the claim are not anticipated by nor made obvious over, the prior art of record.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Point of Contact

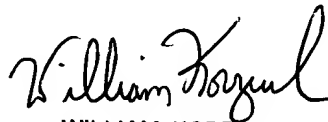
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimlien T Le whose telephone number is 703 305 3498. The examiner can normally be reached on M-F 8a.m-5p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 703 305 6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimlien Le


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